

FINAL DETERMINATION

Kentucky Mountain Power, LLC has applied to the Kentucky Division for Air Quality for a PSD/Title V and Phase II Acid Rain permit to construct and operate a coal refuse fired steam electric generating station in Knott County, Kentucky. The plant is a PSD/Title V source because potential emissions of criteria pollutants exceed the major source thresholds.

A preliminary determination was made to approve the permit and a public notice was placed in The Lexington Herald-Leader on October 17, 2000 and in The Hazard Herald and the Troublesome Creek Times on November 1, 2000. The comment period expired and comments were received from the public, the U. S. EPA, the National Park Service and the Forest Service. Responses to these comments and permit changes associated with these comments are listed in Attachment C. Additionally, the following changes were made in the Final Permit to reflect comments received during the comment period.

1. Under Emission Unit 01 and 02, a NIDS, natural integrated desulfurization system, has been added. The emissions limitation for sulfur dioxide, Subpart 2 (c), reflects the vendor guarantee for this system.

“Pursuant to Regulations 401 KAR 59:016, Section 4(1) and 401 KAR 51:017, sulfur dioxide emissions shall not exceed 0.13 lbs/MMBTU from each unit based on a thirty (30) day rolling average.”

2. Under Emission Units 01 and 02, the emissions limitation for nitrogen oxide, Subpart 2 (e), has been re-worded for clarity.

“Pursuant to Regulations 401 KAR 51:017, nitrogen oxides emissions shall not exceed 0.07 lbs/MMBTU based on a thirty (30) day rolling average. The NO_x emission limit is waived for the specific SNCR optimization study activity as detailed in Section D (2, 3 and 4). Should the optimization study indicate that 0.07 lbs/MMBTU is unachievable, then a significant revision to the permit will be required.”

Additionally, permit language in Section D, Source Limitations and Testing Requirements, has been re-worded for clarity as it relates to the emissions limitation for nitrogen oxide. Section D, Subparts 3 and 4, were rewritten as follows:

“The permittee shall complete a study for each CFB to determine the optimized performance of the SNCR system within 18 months after the initial startup date. The Kentucky Division for Air Quality shall have 60 days to review the optimization study. Should the optimization study indicate that 0.07 lbs/MMBTU is unachievable, then a significant revision to the permit will be required. The nitrogen oxide emissions rate shall never exceed 0.10 lbs/MMBTU during the optimization study.”

“The NO_x emission limit of 0.07 lbs/MMBTU is waived for the specific SNCR optimization study activity as detailed in Condition 2 above not to extend more than 365 days after the

initial compliance demonstration. However, the nitrogen oxide emissions rate shall never exceed 0.10 lbs/MMBTU, during or after the SNCR optimization study. If the optimization study indicates a need to re-evaluate the NOx emission limit set forth in the permit, the Kentucky Division for Air Quality will issue a notice to allow the public to have no less than 30 days review and comment period on any changes imposed by the Kentucky Division for Air Quality at that time.”

3. Under Emission Units 01 and 02, Subpart 4 (j), the Division has determined that the facility should perform quarterly testing for hazardous air pollutants.

“....The samples taken on a quarterly basis shall also be analyzed to determine the hazardous air pollutant content. This data, along with the baseline data established during the initial compliance test, shall be used to demonstrate compliance with the emission limits for these pollutants. Depending on the results of the quarterly tests, additional steps may be required to ensure that applicable hazardous air pollutant content emission limits are not exceeded.”

4. Under Emission Units 01 and 02, Subpart 7 (b,c), the Division has included permit conditions to ensure compliance with the 0.13 lbs/MMBTU sulfur dioxide emissions limit.

“A compliance demonstration for the NIDS, natural integrated desulfurization system, must be completed within 180 days of start-up. If compliance with the 0.13 lb/mmBTU sulfur dioxide emissions limit is not met within this initial compliance period, operations at the facility must be suspended until all necessary modifications to control equipment are completed. During this period, the facility can be in operation only for the purpose of demonstrating compliance.”

“Sulfur dioxide emissions (in pounds) will be calculated monthly based on CEMS data. If the total of the sulfur dioxide emissions exceeds the maximum allowable for any consecutive six month period, operations at the facility will be suspended until all necessary modifications to control equipment are completed. During this maintenance period, the facility can be in operation only for the purpose of demonstrating compliance.”

5. Under Emission Units 08 and 09, the Division has determined that Regulation 40 CFR 63 Subpart Q, does not apply to the cooling towers. All permit language relating to this regulation has been removed from the Final Permit.

The following are the most significant changes to the preliminary determination. It is important to note that Kentucky Mountain Power LLC decided to add additional control equipment to

control their sulfur dioxide emissions. Therefore, Table 1 below has been changed to reflect the decreased emissions of sulfur dioxide. Kentucky Mountain Power LLC also ran refined Calpuff modeling. The Calpuff modeling analysis was successful in answering several questions that surfaced during the public comment period. Letters have been received from the Federal Land Managers and the National Park Service stating that the modeling analysis showed no adverse impacts to Class I areas.

1. Changes to Table 1.

TABLE 1

POLLUTANTS	EMISSION RATE TONS PER YEAR
CARBON MONOXIDE (CO)	6039
NITROGEN OXIDES (NO _x)	1564
PARTICULATE MATTER (PM ₁₀)	341
SULFUR DIOXIDE (SO ₂)	2904
VOLATILE ORGANIC COMPOUNDS (VOC)	161
LEAD (Pb)	4.34
MERCURY (Hg)	1.81
BERYLLIUM (Be)	0.2904
FLUORIDES (AS HF)	118.39
SULFURIC ACID MIST (H ₂ SO ₄)	223.38

2. The application was logged complete on June 15, 2001. The preliminary determination incorrectly states this date as June 19, 2001.
3. In Table 3, the emissions limitation for NO_x was incorrectly listed as 0.125 lbs/MMBTU. As stated above, this limit is 0.07 lbs/MMBTU. The NO_x emission limit is waived for the specific SNCR optimization study activity as detailed in Section D (2, 3 and 4) of the Final Permit. During this optimization study, the emissions limitation for nitrogen oxide shall not exceed 0.10 lbs/MMBTU.

In conclusion, a thorough analysis has been made of all available information pertaining to this application. The division has concluded that the source will comply with all applicable air quality regulations and requirements. Compliance with the terms of the permit will ensure compliance with all air quality requirements. Therefore, it is recommended that the permit be issued as conditioned.